

Bixa orellana leaves extract inhibits bradykinin-induced inflammation through suppression of nitric oxide production.

Abstract

Objective: The present study was conducted to assess the anti-inflammatory effect of a crude aqueous extract of *Bixa orellana* leaves (AEBO) and to examine the possible involvement of nitric oxide (NO) in its anti-inflammatory mechanism. **Materials and Methods:** The air-dried, powdered leaves were soaked in distilled water (1:20 w/v) at 50°C for 24 h and the supernatant obtained was freeze-dried (yield 8.5% w/w). The dosage was recorded as the mass of extract per kg b.w. of rats in all inflammatory assays (bradykinin-induced paw edema, peritoneal vascular permeability and NO assay). **Results:** Pretreatment with AEBO for 4 consecutive days exhibited significant inhibitory activity against inflammatory models, the bradykinin-induced hind paw edema model and bradykinin-induced increased peritoneal vascular permeability at both doses in dose-dependent manner. In addition, AEBO was also found to significantly suppress the production of NO at doses of 50 and 150 mg/kg. **Conclusion:** This study provides scientific data to support the traditional use of *B. orellana* leaves in treating inflammation. Results from this study suggest that AEBO exerts anti-inflammatory effects. Part of this anti-inflammatory effect may be associated with its antibradykinin activity and may be related to a reduction of the NO production.

Keyword: Anti-inflammatory; *Bixa orellana*; Bradykinin; Vascular permeability.